THE IMPORTANCE OF INFOGRAPHICS IN HIGHER LEVELS OF PEDAGOGY

Cody Main

Informatics/Digital Media Major

Indiana University Southeast

The Problem

The world is a visual place.

- The brain processes visuals 60,000 times faster than text
- 90% of information the brain receives is visual

Current textbook visuals are:

- Hard to understand
- Difficult to remember

Visuals help recall and memory.

Used as educational aids.

College textbooks need better visual infographics.

Informatics can help fix this.

What Is Informatics and How Can It Help?

Informatics is the study of:

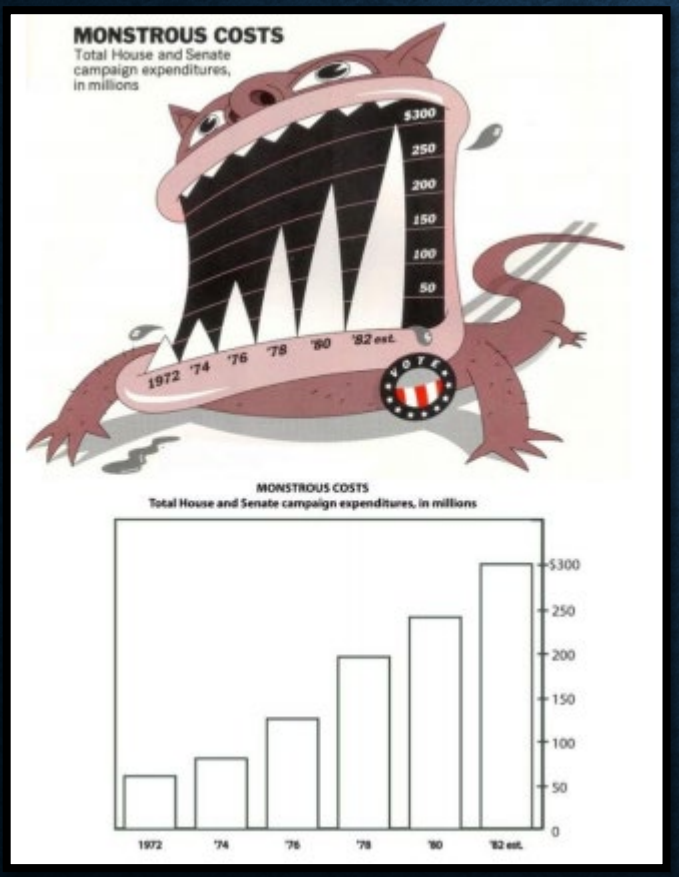
- interactions between humans and technology
- how information is stored and presented

Informatics is a very versatile field.

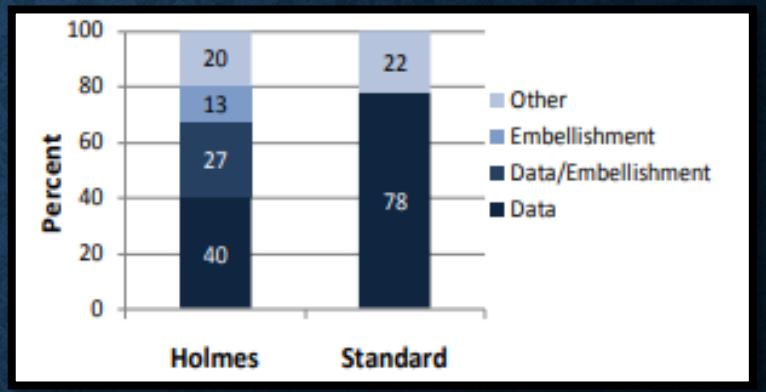
Informatics can help correct design problems.

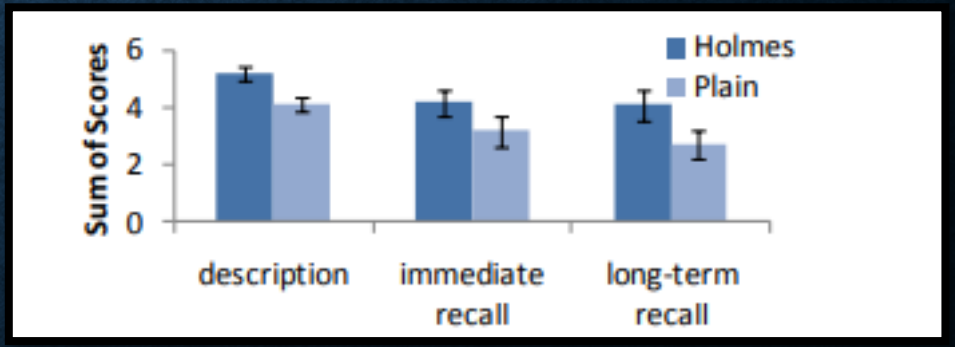
Informatics with a focus in Digital Media is best suited to solve this problem.

Why is redesigning visual infographics in college textbooks important?



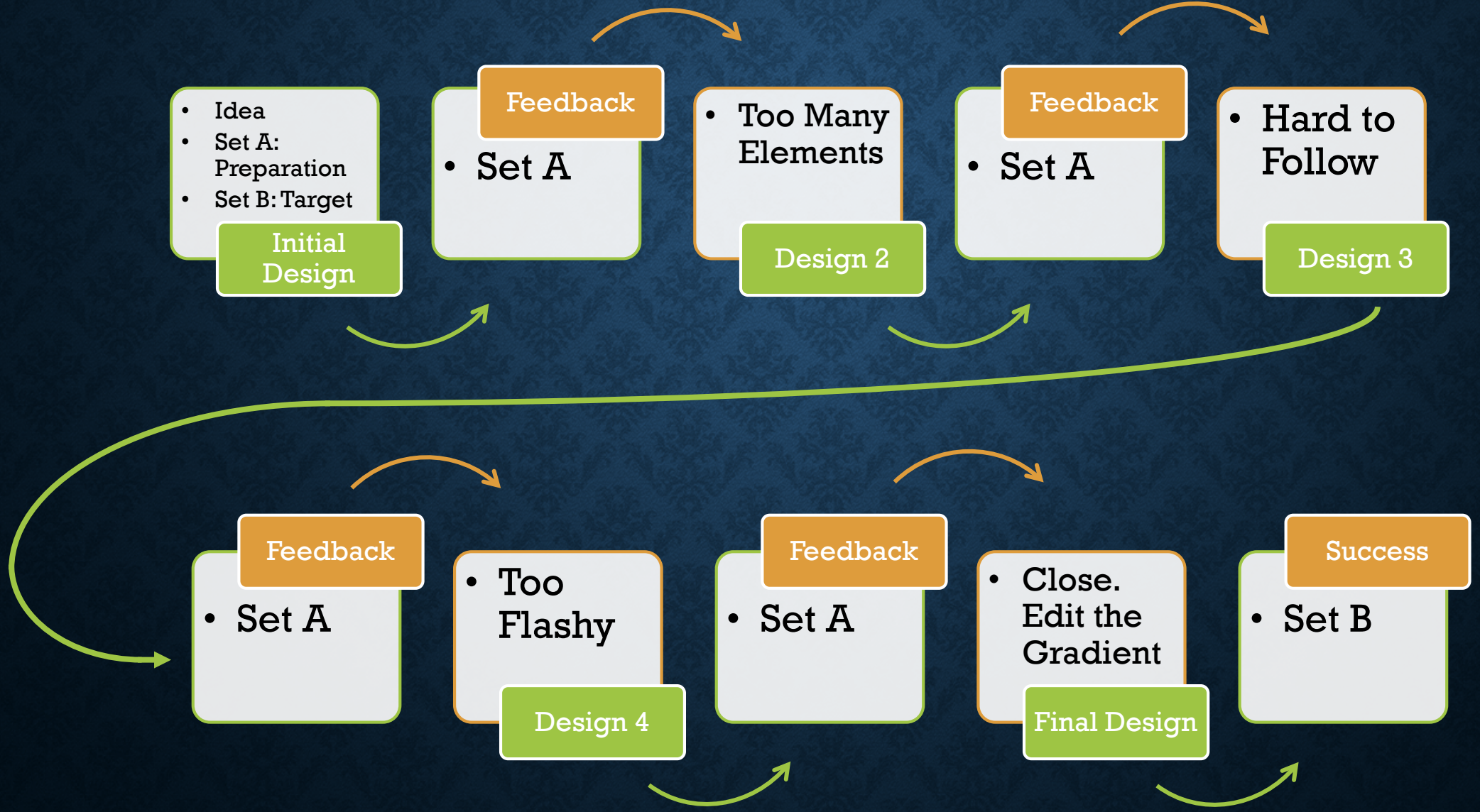
- Better Memory
- Better Recall





This means better test scores!!!

Test Study: Redesign of a Concept in College Textbooks



Test Study: Set Sizes and Dependencies

Set A (24 Users): Users with knowledge of:

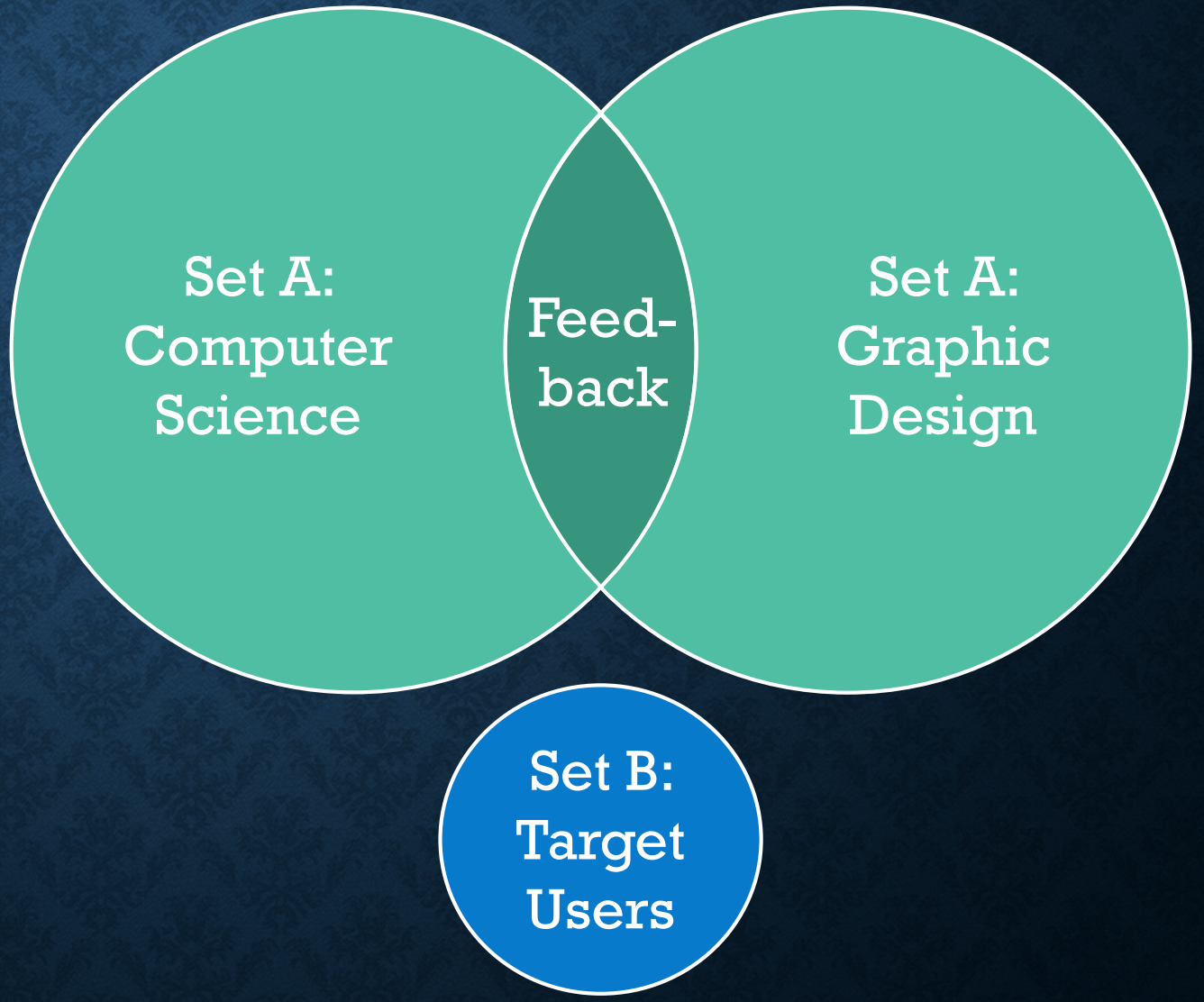
- Computer Science
- Graphic Design

Feedback: Results of testing Set A.

Used to design for Set B.

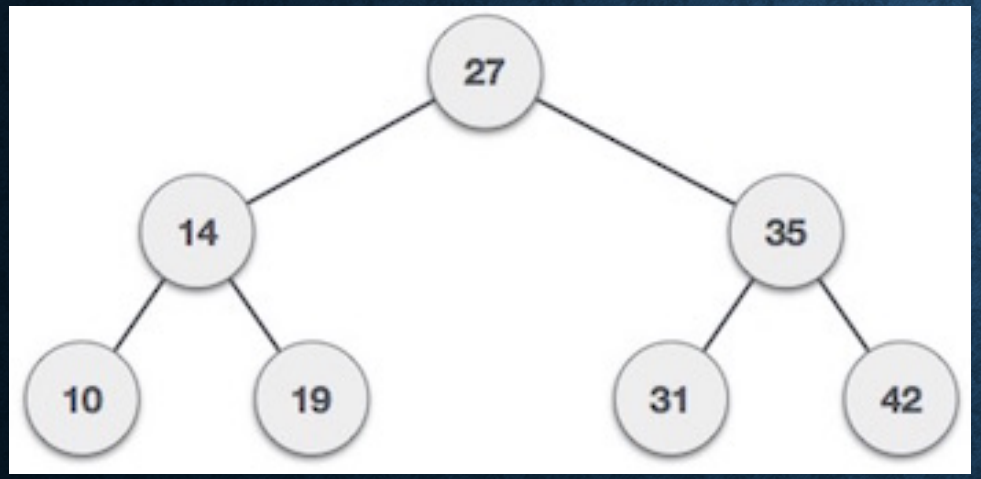
Set B (8 Users): Users without knowledge.

Design dependent on Set A test results.



Original Example: Binary Search Tree

Example

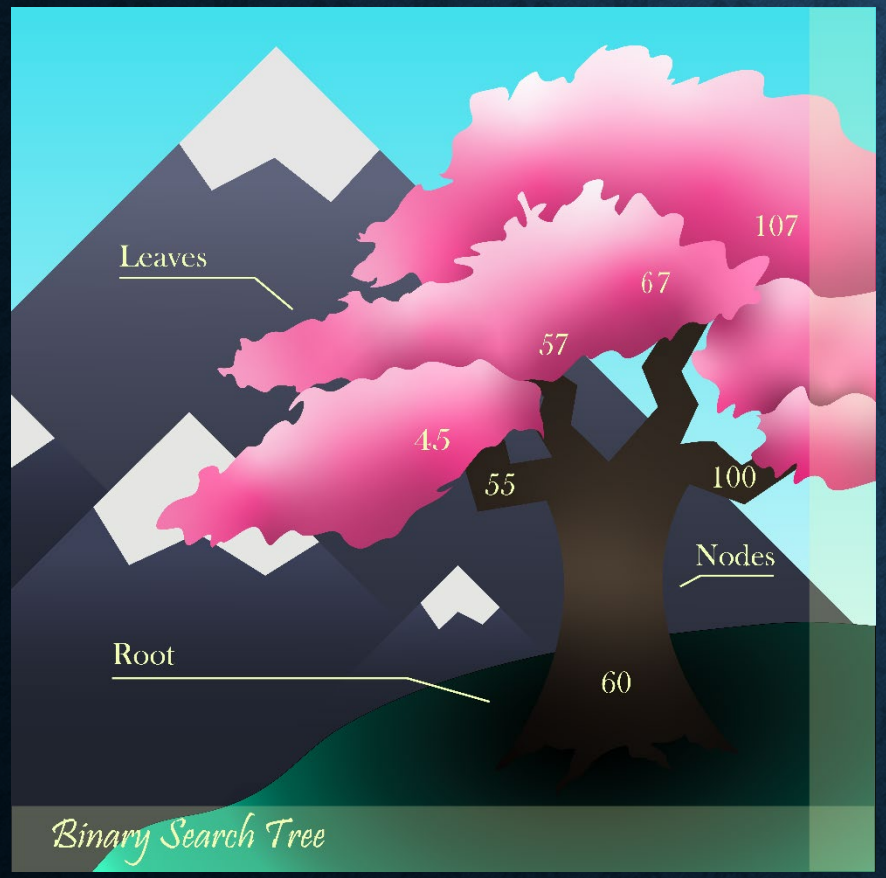


Feedback

- Too Abstract
- Archaic Design
- Users without knowledge of concept won't understand it
- No use of aesthetics as visual aids

The Design Process: Phase 1/Set A

Design 1



Feedback

Mountains too distracting:

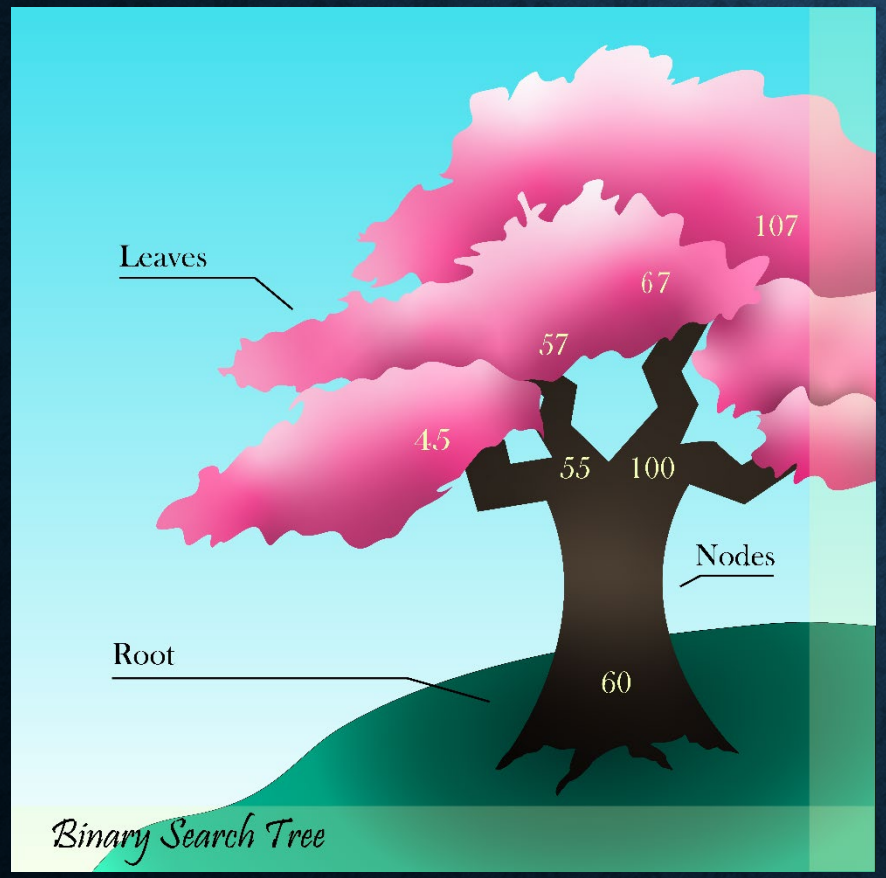
- Cool mountain color overpowers warm color of leaves
- Mountain sizes pull the eye to the background

Branches are misread:

- Node 55 links to 45 but not to 57
- Node 100 links to neither 67 nor 107

The Design Process: Phase 2/Set A

Design 2



Feedback

Infographic not understood:

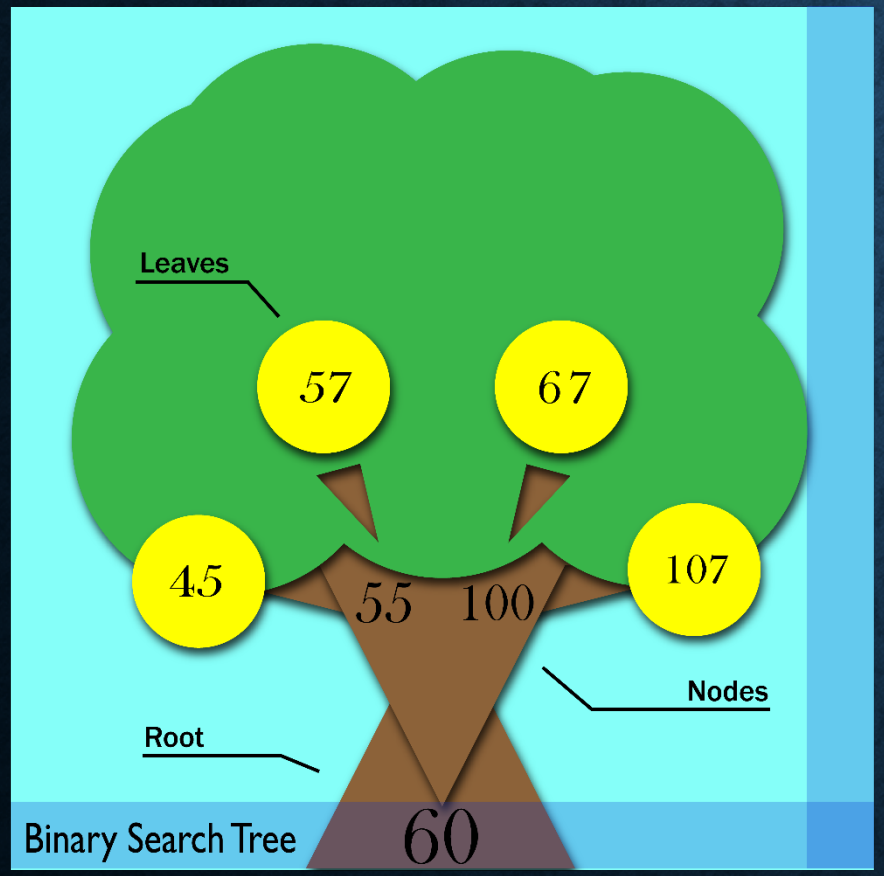
- Warm color of leaves conflicts with the blue gradient
- Too garish
- Hard to read the info in black
- Fonts are serif

Branches are misread:

- Tree trunk is too dark
- Node 100 links to 67 but not 107

The Design Process: Phase 3/Set A

Design 3



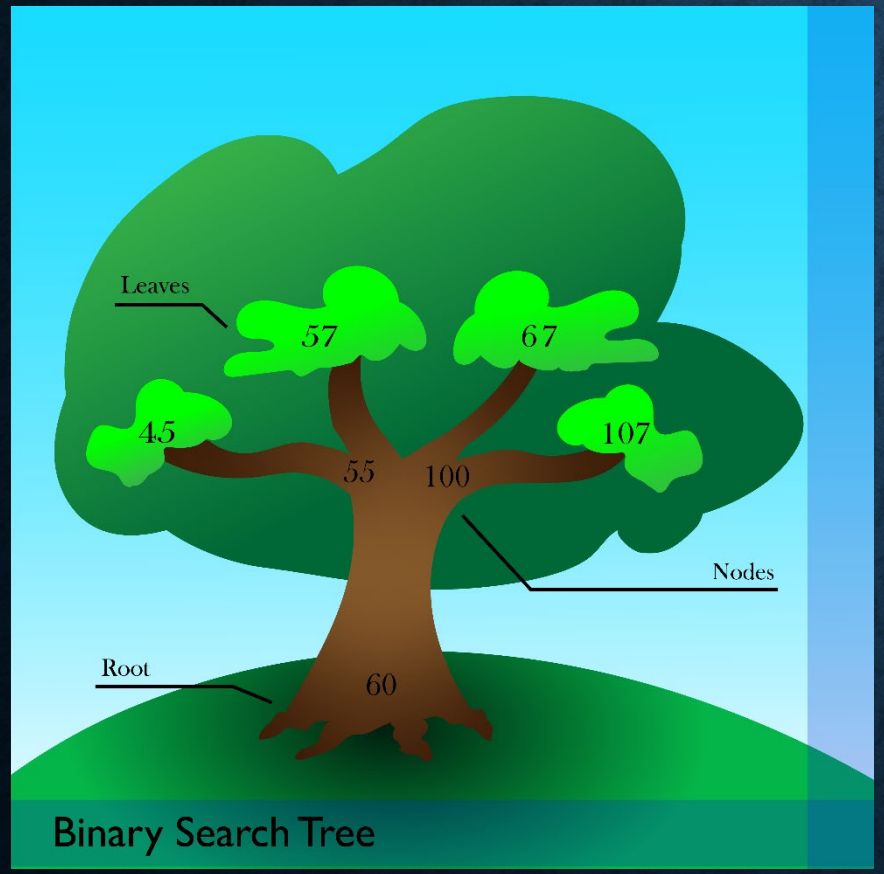
Feedback

Too much Embellishment:

- Oversaturated colors
- Too flashy
- Looks like it was made with construction paper
- Hard to distinguish as a tree

The Design Process: Phase 4/Set A

Design 4



Feedback

Gradients Distracting:

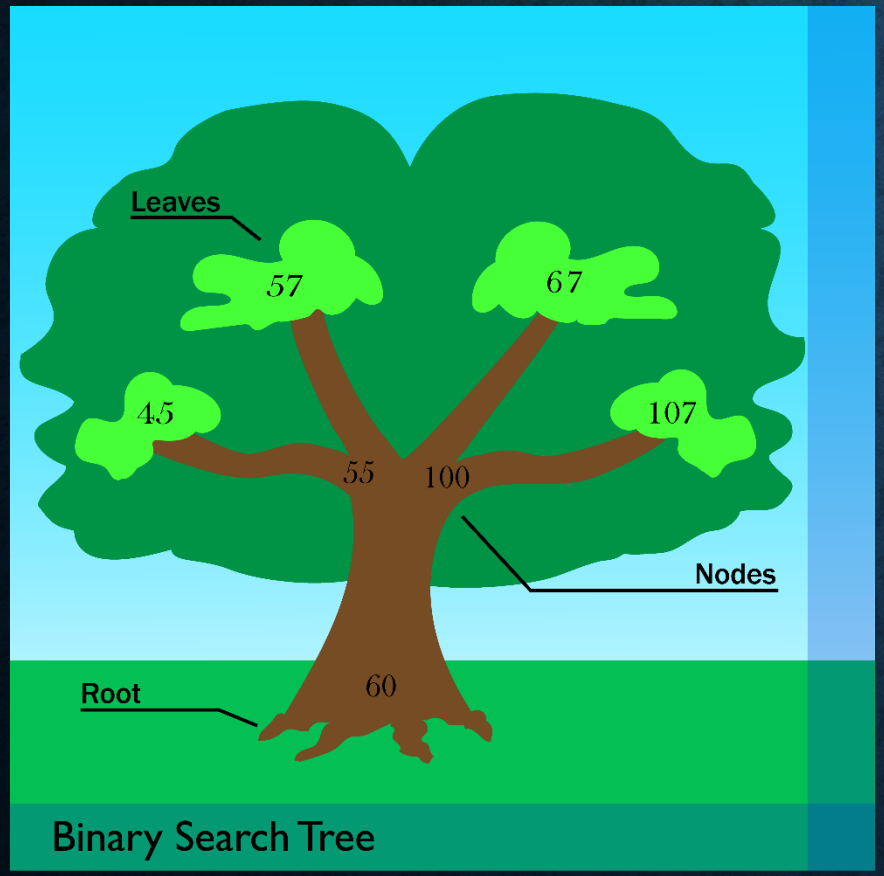
- Gradients are too prevalent
- Tree trunk contrast is too different
- Tree outline too simple

Other Problems:

- Data headings too small
- Hard to read the serif fonts

The Design Process: Final Phase/Set B

Final Design



Feedback

Infographic widely understood:

- Infographic simple and direct
- Easy to see node connections
- Easy to see info
- Fonts are simple sans-serif

Results:

- Each individual responded positively for memory and recall
- Concept was understood better than original example

What Could Go Wrong if the Set Sizes were Different?

- Not enough users
- Not enough design opinions
- Not having proper ratios for sets A and B

What Could Go Wrong if the We Used Designs 1 - 4?

- Critical information would be hard to see
- Background would overpower the foreground
- Tree would not be the main central idea to the viewer
- Oversaturated colors would distract
- Shapes would be too simplified
- Gradients would distract viewers from the big picture

Short and Long Term Advantages of Using Aesthetic Design

Short Term

- Critical information would be easier to see
- User memory and recall would increase for exams
- User's would be able to understand concepts easier

Long Term

- Critical information would be easier for user's to recall
- User's would be able to understand concepts easier
- User's would have higher success in college courses